Info

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Boundary values of $\mathscr{O}(D)$

$$\begin{array}{ccccccccc} & & & & & & & & [0,\infty) \\ & & & & & & & & \| \ \|_\infty \uparrow \\ \mathscr{O}(\overline{D}) & \hookrightarrow & \mathscr{O}(D)\cap\mathcal{C}^\infty(\overline{D}) & \hookrightarrow & \mathscr{O}(D)\cap\mathcal{C}(\overline{D}) & \hookrightarrow & \mathscr{O}^\infty(D) & \hookrightarrow & \mathscr{O}(D) \\ & & \downarrow & & \downarrow & & & & \\ & & \mathcal{C}^\infty(S^1) & \hookrightarrow & \mathcal{C}(S^1) & & & & \end{array}$$

5.2 Theorem. *If $f : \mathbf{D} \to \mathbf{C}$ is a bounded analytic function, then f has radial limits almost everywhere on $\partial\mathbf{D}$.*

Current note has 0 direct children and 0 total descendants.

- stem
  - subobjects of and functions on $\mathbb{R}^n, S^n, \mathbb{C}^n$ and its quotients $\Gamma\backslash^{\mathbb{R}^n}, \Gamma\backslash^{\mathbb{C}^n}$
    - Holomorphic functions on spaces over $\mathbb{C}$ of dimension 1
      - $\mathscr{O}(D)$
        - Boundary values of $\mathscr{O}(D)$

And it has 5 siblings.

- stem
  - subobjects of and functions on $\mathbb{R}^n, S^n, \mathbb{C}^n$ and its quotients $\Gamma\backslash^{\mathbb{R}^n}, \Gamma\backslash^{\mathbb{C}^n}$
    - Holomorphic functions on spaces over $\mathbb{C}$ of dimension 1
      - $\mathscr{O}(D)$
        - Boundary values of $\mathscr{O}(D)$
        - $\mathscr{O}(\overline{D})$
        - $\mathscr{O}(D)\cap\mathcal{C}(\overline{D})$
        - $\mathscr{O}\cap L^2(D)$
        - Reconstructing $\mathscr{O}(D)$ from its boundary values